

REVISIONS

Rev	ECN	Description	Date	Approved
01	Cxxxxx	Pre-release to production	1/9/13	T. Awan



Bullet III GPS/Glonass – 5V TNC Connector  
RoHS Compliant Trimble Specification

Approvals	Date	Bullet III GPS/Glonass – 5V TNC Connector RoHS Compliant Trimble Specification		
DRAWN				
CHECKED				
ISSUED				
Sheet	Size	Drawing Number	Revision	
1 of 6	A	97860-00-SP	A	



**APPROVALS**

Name	Department/Title	Signature	Date (MM/DD/YY)
Tariq Awan	Project Manager	<i>T. Awan</i>	01-29-13
Richard Funderburk	System Architect	<i>Richard Funderburk</i>	2/5/13
Karen Guldan	General Manager	<i>Karen Guldan</i>	2/11/13
Leland Ho	Hardware Engineer	<i>Leland Ho</i>	1/30/13
Haroon Muhammad	Product Marketing	<i>Haroon Muhammad</i>	2/5/13
Julian Dortort	Manager Customer support	Julian out	on vacation
Armando Perez	Mechanical Engineer	<i>Armando Perez</i>	1/29/13

TRIMBLE NAVIGATION LIMITED  
BULLET ANTENNA  
GPS/GLONASS ANTENNA WITH LOW NOISE AMPLIFIER  
RoHS COMPLIANT

**Part Number 97860-00**

Part Number 97860-00-SP

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# Trimble Proprietary - Internal Use Only

## SPECIFICATION FOR GPS/GLONASS ANTENNA WITH LOW NOISE AMPLIFIER RoHS COMPLIANT

### 1.0 APPLICATION

THIS SPECIFICATION DESCRIBES THE ELECTRICAL AND MECHANICAL CONDITIONS OF THE TRIMBLE BULLET ANTENNA, P/N 97860-00.

### 2.0 SYSTEM

THIS ANTENNA SYSTEM CONSISTS OF TWO FUNCTIONAL BLOCKS LISTED BELOW.

#### 2.1 ANTENNA ELEMENT

#### 2.2 LNA

### 3.0 GENERAL

#### 3.1 ENVIRONMENTAL CONDITIONS

3.1.1 OPERATING TEMPERATURE -40°C TO +90°C

3.1.2 STORAGE TEMPERATURE -40°C TO +90°C

3.1.3 RELATIVE HUMIDITY 65 ± 20% RH

#### 3.2 ELECTRICAL SPECIFICATIONS

3.2.1 INPUT VOLTAGE 5.0V +/- 1.0V

3.2.2 CURRENT CONSUMPTION 21 ± 3mA (AT 5.0 ± 0.1V)

3.2.3 OUTPUT CONNECTOR TNC FEMALE

#### 3.3 MECHANICAL SPECIFICATIONS

3.3.1 MOUNTING NUT MOUNT

3.3.2 WATER PROOF WATER PROOF (IP67) WITH RUBBER CAP ON

3.3.3 SHOCK 50G : VERTICAL AXIS

30G : ALL AXIS

3.3.4 VIBRATION 10 ~ 200Hz. LOG. SWEEP 3.0G

(SWEEP TIME : 15 MIN.), 3 AXIS  
3.3.5 ANTI-COROSION BASED ON JIS Z 2371, SPRAY 5%  
SALT WATER 35°C SHOULD NOT  
RUST AFTER 96Hrs.

3.3.6 CONFIGURATION AND  
DIMENSION SEE MECHANICAL DRAWING

3.3.7 WEIGHT 178g ± 10g

3.3.8 CERTIFICATIONS CE, FCC, AND INDUSTRY CANADA(IC)

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SPECIFICATION FOR GPS ANTENNA WITH LOW NOISE AMPLIFIER		
4.0	PATCH	
4.1	FREQUENCY RANGE	1,575MHz~1615MHz
4.2	CENTER FREQUENCY	1588 ± 3 MHz
4.3	BANDWIDTH (10dB RETURN LOSS)	50 MHz TYP
4.4	15.75.42 MHz	3.22 dBic MAX.
	GAIN (0°) 16.02. MHz	3.70 dBic MAX.
4.5	POLARIZATION R.H.C.P	
5.0	LNA	
5.1	FREQUENCY RANGE	1,575MHz~1615MHz
5.2	GAIN 1575.42 MHz	32 ± 3 dB
	1602 MHz	32 ± 3 dB
5.3	NOISE FIGURE	2.0 dB typ
5.4	OUTPUT V.S.W.R	2.5 MAX
5.5	OPERATION VOLTAGE	5.0 ± 1.0V
5.6	CURRENT	21 ± 3mA (at 5.0 ± 0.1V)
6.0	OVERALL SPECIFICATIONS (THROUGH ANTENNA, LNA, WITHOUT CABLE LOSS)	
6.1	FREQUENCY RANGE 1,575MHz~1615MHz	
6.2	ZENITH GAIN 1575.42 MHz	35.22 ± 3dBic (+25°C ± 5°C for specific ground plane)
	1602 MHz	35.70 ± 3dBic (+25°C ± 5°C for specific ground plane)
6.3	OUTPUT IMPEDANCE	50Ω
6.4	OUTPUT VSWR	2.5 MAX.
6.5	OPERATION VOLTAGE	5.0 ± 1.0VmA
6.6	CURRENT	21 ± 3Ma (at 5.0 ± 0.1V)
7.0	MTBF	GREATER THAN 300K HRS
8.0	RECOMMENDED STORAGE CONDITION AND STORAGE TERM	STORE IN ROOM CONDITION AS LISTED BELOW: TEMPERATURE -20°C~+45°C, HUMIDITY 80% MAX.
9.0	EXTERNAL APPEARANCE	NO STAIN OR FLAW MUST BE FOUND.

